

# Yakson touch as a part of early intervention in the Neonatal Intensive Care Unit: A systematic narrative review

Preeti Parashar, Asir John Samuel, Arpna Bansal<sup>1</sup>, Vencita Priyanka Aranka

## Abstract

Yakson is a Korean therapeutic touch given to neonates and infants by caressing their abdomen with one hand while the other hand is placed on the back of the neonate/infant either to relieve their pain or to calm them down. It was traditionally used by Koreans by caressing the aching body part of their children with a belief that it would relieve their pain. In spite of clinical evidence of its usefulness, there is limited literature available on Yakson touch. A systematic narrative review (SNR) was undertaken on studies that were carried out on the effectiveness of Yakson touch on infants and neonates. Only seven studies were detected from five major electronic databases, searched with the keywords: "Yakson," "Yakson touch," and "Yakson in neonates". One of the studies has been included in two Cochrane reviews by the same group of researchers published in 2011 and 2015, respectively, and also in a literature review. The evidence from these articles suggests that Yakson touch is able to increase the sleep scores of infants, affects their behavioral response, decreases the stress levels, increases maternal attachment, and has calming effects on them. However, the number of studies is limited, and thus the efficacy of this intervention has not been sufficiently established. Hence, there is a definite need for future studies to prove the efficacy of Yakson to include it in the early intervention programs. This SNR is aimed at compiling the studies which determined to prove the efficacy of the intervention of Yakson.

**Keywords:** Early intervention, infants, neonates, physiotherapy, therapeutic touch, Yakson

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## Introduction

Yakson is a traditional Korean therapeutic touch given to children to relieve their pain or decrease their stress. Koreans used to caress the aching body parts of their sick children and believed that it will relieve their pain and discomfort. This caressing act was called "Yakson," where "Yak" means medicine and "son" refers to hand.<sup>[1]</sup> A simple Yakson protocol was developed by Im and Kim (2009), which includes some of the key aspects of

the traditional Yakson (warm hands, touching without pressure, and slow hand movement) that are appropriate for preterm infants.<sup>[1]</sup> Despite evidence of its usefulness, very limited literature is available on Yakson touch. Available articles from inception to April 2016 were reviewed from various databases (Pedro, MEDLINE, PubMed, Cochrane library, and Google scholar) using the keywords: "Yakson touch" and "Yakson in neonates".

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## From:

Department of Pediatric Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar University, <sup>1</sup>Department of Pediatrics, Maharishi Markandeshwar Institute of Medical Sciences and Research, Maharishi Markandeshwar University, Mullana, Haryana, India

## Correspondence:

Dr. Asir John Samuel, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar University, Mullana - 133 207, Haryana, India.  
E-mail: [asirjohnsamuel@mmumullana.org](mailto:asirjohnsamuel@mmumullana.org)

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There were no data available on Pedro; two articles from Cochrane and five articles from PubMed were reported. Further, there are two more articles which were originally in Korean language, but their abstract was available in English. Thus, a total of eight articles were available and were reviewed in this systematic narrative review (SNR). One literature review was available which included one of these studies. All the reviews of available literature were performed by the researchers from nursing department in previous reviews. In recent days, the role of neonatal physiotherapists and other health-care professionals such as respiratory therapist has been risen in the Neonatal Intensive Care Unit (NICU) for early intervention programs (EIPs). Till date, no documented evidence is available for the use of Yakson touch by physiotherapists and other health-care professionals.

### Historical Background of Yakson

The origin of Yakson touch could not be traced as there is no documented record about its origin and from when it was in use. However, a traditional belief exists that it was first used among Koreans to relieve their sick children's pain or discomfort by gently caressing their children on the aching body part. This act of caressing is named as "Yakson," where "Yak" means medicine and "son" refers to hand. In neonates, the Yakson protocol consists of traditionally used Yakson. The protocol is suitable for preterm babies as it includes touching the baby gently and slowly with warm hands devoid of any pressure.<sup>[1,2]</sup> Following studies suggest the effectiveness of Yakson touch for neonates, particularly in the areas of pain, relaxation, sleep, stress, energy consumption, and attachment behavior.

### Reduces Pain Reactivity

The two Cochrane reviews on nonpharmacological management of infant and young child procedural pain have stated that Yakson can reduce pain reactivity and provide immediate pain relief. However, the efficacy of therapeutic touch intervention, Yakson has not been proved to be shown better in reducing pain reactivity or immediate pain regulation in preterm infants than pharmacological management due to low-quality evidence.<sup>[3,4]</sup> Im *et al.* also studied the effect of Yakson and nonnutritive sucking (NNS) on reducing the pain that neonates experience when undergoing the heel stick procedure for blood testing. The interventions were given 1 min before heel stick until the completion of the heel stick. The oxygen saturation (SaO<sub>2</sub>) levels in the Yakson and NNS group neonates were maintained significantly better than in the control group neonates.

There was no significant difference between the groups with regard to heart rate and neonatal infant pain, measured using the Neonatal Infant Pain Scale. These authors suggested that Yakson could be used during heel stick to help neonates maintain their SaO<sub>2</sub> level following the procedure.<sup>[5]</sup> The physiology behind this effect of Yakson might be that pain results in irregular respiratory rate and as Yakson calms them down; their SaO<sub>2</sub> level is maintained.

### Relaxation

Yakson touch has been used as relaxing or pain relief therapy in neonates and has proved to relieve their stress. Touch has an important role in the optimal growth and development of preterm infants and one of the most developed senses provided by health-care staff to relax preterm infants. Therefore, therapeutic touch has been considered as one of the important complementary treatments.<sup>[1]</sup>

### Increasing Sleep

One study found that Yakson therapeutic touch increased the sleep scores and thus significantly affected the behavioral response of premature infants. There was decline in stress hormones levels and energy expenditure. They also suggested the need for further research for confirming the effects of Yakson therapeutic touch on infant's development at different stages.<sup>[2]</sup>

### Decreases Stress and Energy Consumption

One study has concluded that Yakson and gentle human touch increased sleep states of the neonates and decreased stress and energy consumption in neonates in the NICU.<sup>[1]</sup> Another study has found that Yakson therapy had a pain relief effect in behavior responses and SaO<sub>2</sub> and suggested to use it for simple pain management for a heel prick.<sup>[3,4]</sup> Kim and Im found that Yakson is another touching method that is not aversive or stressful to preterm infants, and which may provide several positive effects on preterm infants [Table 1].<sup>[5]</sup>

### Improve Attachment Behavior

Yakson therapy effects have been found, through a quasi-experimental study, to improve maternal attachment and attachment behavior.<sup>[6]</sup> Kim *et al.* evaluated the acute impact of gentle human touch and Yakson both on preterm infant state during and immediately after touch. The intervention was given for 15 days, and they found significantly greater sleeping state in both groups after touch. The effect was significantly stronger with Yakson than gentle

**Table 1: Summary of the published literature available on Yakson touch in the treatment of preterm infants in Neonatal Intensive Care Unit from the databases**

Author	Title	Study setting	Population	Conclusion of the study
Bahman Bijari <i>et al.</i> <sup>[1]</sup>	Gentle human touch and Yakson: The effect on preterm's behavioral reactions	NICU	Preterm infants (n=90)	Yakson reduces stress and energy expenditure in preterm infants in NICU
Eshghi <i>et al.</i> <sup>[2]</sup>	Effects of Yakson therapeutic touch on the behavioral response of premature infants	NICU	Preterm infants (n=60)	Yakson increased sleep status of infants
Park <i>et al.</i> (2006) <sup>[6]</sup>	Pain relieving effect of Yakson therapy for infants	NICU	Preterm infants (n=32)	Yakson therapy had a pain relief effect in infants
Im and Kim <sup>[7]</sup>	Effect of Yakson and gentle human touch versus usual care on urine stress hormones and behaviors in preterm infants: A quasi-experimental study	NICU	Preterm infants (n=59)	Increase in sleep state of preterm infants
Im and Park <sup>[8]</sup>	Effects of Yakson therapy on maternal attachment and attachment behavior in mother of preterm infants	NICU	Preterm infants (n=60)	Yakson showed improved maternal attachment and attachment behavior
Im and Kim <sup>[9]</sup>	Acute effects of Yakson and gentle human touch on the behavioral state of preterm infants	Not mentioned in abstract*	Preterm infants (n=40)	Yakson had arousing effect on preterm infants
Pillai <i>et al.</i> <sup>[3,4]</sup>	Nonpharmacological management of infant and young child procedural pain (review)	Hospital	Healthy neonates (n=99)	Yakson can reduce pain reactivity and provide immediate pain relief
Im <i>et al.</i> <sup>[5]</sup>	Pain reduction of heel stick in neonates: Yakson compared to nonnutritive sucking	Hospital	Healthy neonates (n=66)	Yakson can relieve heel stick pain in neonates
Chhugani and Sarkar <sup>[10]</sup>	Therapeutic touch modalities and premature neonate's health outcome: A literature review	Hospital	Healthy neonates (n=99)	Yakson can reduce pain reactivity and provide immediate pain relief

\*Full article could not be obtained (Korean article). NICU: Neonatal Intensive Care Unit

human touch. During touch, about half the Yakson infants showed an arousal effect while in infants where gentle human touch was administered did not show much change. The infants were calmer after both the interventions. This calming effect can prove beneficial for the growth and development of the infants. They concluded that Yakson had an arousing effect on infants during touch and it can prove beneficial in terms of social development.<sup>[7-9]</sup>

## Discussion

Touch is valuable tool in service of human healing. It is the earliest sense to develop in a human embryo and consider as the "mother of all senses". Therefore, any touch stimulus given to neonate will produce good response; thus, we advocate the use of Yakson touch in preterm neonates. A preterm neonate in NICU faces painful stimuli in the form of various routine procedures. In addition, a preterm neonate is deprived of sensory stimulation and pressure of amniotic fluid before time. Therefore, we suggest the use of Yakson touch as routine intervention for preterm neonates in NICU.

Out of the seven experimental studies reviewed, six were performed on preterm infants and one was performed on healthy neonates. The sample size in these studies ranged from 32 to 99. All of the studies have shown that Yakson has positive effect; thus, it can be assumed that Yakson has least chances of producing adverse effects, thus safe for preterm neonates. Individual studies have shown that Yakson touch is able to provide pain relief and improve sleep, affects their behavioral response, decreases the stress levels,

increases maternal attachment, and has calming effects. However, the number of studies is limited; therefore, the efficacy of Yakson touch could not be supported by studies with high level of evidence. That might be a major reason for very limited use of Yakson touch in neonates in the NICU.

One of the studies suggested the use Yakson for simple pain management for a heel prick.<sup>[5]</sup> However, they did not explain the physiological basis behind this effect of Yakson as how exactly caressing the abdomen will reduce heel prick pain in neonates. Further, in traditional Yakson, the aching body part of the children was caressed, but in the protocol developed by Im and Kim,<sup>[7]</sup> the abdomen of the preterm infant was caressed. The reason for this was not explained in their study.

The Cochrane review that has included one of the studies on Yakson touch is focused on nonpharmacological management of infant and young child procedural pain and was performed in 2011 and was updated later in 2015. In the updated review, an additional 3355 studies from 2011 to 2015 (March) were assessed for eligibility, out of which 21 studies were selected. However, this review has included the same study on Yakson touch in the updated version; this clearly indicates the scarcity of studies available on Yakson touch. The same study has been included in a literature review by Chhugani and Sarkar.<sup>[10]</sup> The Cochrane review has stated that there is evidence that different nonpharmacological interventions can be used with preterms, neonates, and older infants to significantly manage pain behaviors associated with acutely painful procedures. The most

established evidence was for nonnutritive sucking, swaddling/facilitated tucking, and rocking/holding. They are significant gaps in the existing literature on nonpharmacological management of acute pain in infancy.<sup>[3,4]</sup>

To best of our knowledge, there is no published narrative review or systematic review available on Yakson touch; therefore, this SNR was developed. The main limitation of this review was scarcity of literature with only seven trials; out of them, two articles, which were originally in Korean language and in English only their abstract was available. We have also observed that five of the seven included trials are from the same research group (Im, Kim, Park) and further two of the seven are from the Bahman Bijari and Iranmanesh research group. Thus, it is evident that Yakson has been used by very small number of researchers. In addition, both these research groups are from the department of nursing. Bahman Bijari and Iranmanesh have reported Yakson touch as a nursing care intervention.<sup>[1]</sup> Therefore, we suggest the prompt need of randomized controlled trial (RCT) by researchers from the department of physiotherapy and other health professionals working in the NICU to extend the use of Yakson touch as a part of EIP and also in other health-care interventions in an early phase.

## Conclusion

The studies performed on Yakson touch provide significant evidence on the efficacy of Yakson on pain management in the neonates, calming the neonates and infants, improvement in sleep states of infants, decreasing the stress levels and arousal effect. Yet, there is a limited number of studies available on the effect of Yakson touch on neonate, there is an immediate need for more number of high-quality RCT.

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## Conflicts of interest

There are no conflicts of interest.

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